# Lie Groups and Representation Theory Seminar at the University of Tokyo

## リー群論・表現論セミナー

DATE December 3 (Mon), 2018, 17:00–18:00

PLACE Room 126, Graduate School of Mathematical Sciences

SPEAKER **Ali Baklouti** (Faculté des Sciences de Sfax)

TITLE Monomial representations of discrete type and differential operators theory

ABSTRACT Let $G$ be an exponential solvable Lie group and ¥$tau$ a monomial representation of $G$, an induced representation from a connected closed subgroup of $G$ of a unitary character. It is well known that ¥$tau$ disintegrates into irreducible factors and the multiplicities of each isotypic component are explicitly determined. In the case where $G$ is nilpotent, these multiplicities are either finite or infinite almost everywhere, with respect to the disintegration's measure. We associate to ¥$tau$ an algebra of differential operators and it is shown that in the nilpotent case, the commutativity of this algebra is equivalent to the finiteness of the multiplicities of ¥$tau$. In the exponential case, we define the notion of monomial representation of discrete type. In this case, we show that such an equivalence does not hold and this answers a question posed by M. Duflo. This is a joint work with H. Fujiwara and J. Ludwig.